

Date: Wed, 31 Aug 94 04:30:14 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #289
To: Ham-Ant

Ham-Ant Digest Wed, 31 Aug 94 Volume 94 : Issue 289

Today's Topics:

 6 meter antenna????HELP!!!
 Helical antennae : software? sources?
 Matching 50 ohms to 25 ohms (2 feedlines) (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 30 Aug 1994 16:30:29 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!
news.umbc.edu!eff!usenet.ins.cwru.edu!cleveland.Freenet.Edu!ah157@network.ucsd.edu
Subject: 6 meter antenna????HELP!!!
To: ham-ant@ucsd.edu

Could someone recommend an antenna for 6 meters fm?
homemade or bought, any sources or ways to make one./
I tried winding a half wavelength around pvc pipe, one ground and one positive
rf but it does not seem to work all that well.
leave mail please.
rob
kb8sqh

Date: 30 Aug 1994 18:14:39 GMT
From: livia.rice.edu!udaya@rice.edu
Subject: Helical antennae : software? sources?
To: ham-ant@ucsd.edu

In article <33ug1d\$3ua@u.cc.utah.edu>, siddoway@ee.utah.edu (Derick Siddoway) writes:

|>

|>

|> Anyway, does anyone know of some good software for modeling helical
|> antennae? Failing that, does anyone know of a good source for some
|> equations so I can model them on my own?
|>

You might want to look up the following:

- [1] Gel'fand, I. M., Graev, Zueva, N. M., Morozov, A. I., and Solove'ev, 1962, ~Magnetic surfaces of the three path helical magnetic field excited by a crimped field," Soviet Physics-Technical Physics, Vol. 6, No. 10, pp 852-855.
- [2] Sensiper, S., 1955, "Elecetromagnetic wave propagation on helical structures, (A review and survey of recent progress)", Feb. 1955, Proceedings of the I. R. E., pp. 148-161.

I am sure you can do a compendex search and get more recent references. Clearly, the above two works are dated. However, they might indicate a few pointers to your problem.

UB

Old vortices never die. They only | udaya@caesar.rice.edu
lose their curls. | Department of Mechanical
| Engg. and Mat. Sci
| Rice University

Date: Tue, 30 Aug 1994 17:12:34 GMT
From: ihnp4.ucsd.edu!galaxy.ucr.edu!library.ucla.edu!europa.eng.gtefsd.com!gatech!
swrinde!sdd.hp.com!hp-pcd!hpcvsnz!tomb@network.ucsd.edu
Subject: Matching 50 ohms to 25 ohms (2 feedlines)
To: ham-ant@ucsd.edu

David Feldman (dgf@netcom.com) wrote:

: I have a situation where I need to drive two antennas simultaneously from
: one feedline.

: Is there a way of doing this with a single in-line transformer of some
: sort? I'd like to feed the two 50 ohm feedlines into a T connector, and
: match a 50 ohm main feedline into this 25 ohm junction.

: Ways I can think of: (1) some other feedline matcher as above, (2) a
: broadband toroid transformer of 2:1 ratio, (3) a low-Q pi network of
: some sort.

(4) could be an "L" network; it will be very low Q and moderately wideband
with such a small ratio. (2) is misleading: a 2:1 turns ratio is a 4:1
impedance ratio; you want more like a 1.4:1 turns ratio. (1) will
indeed work, but may be impractical, depending on the frequency.

More on (1): you can use a 1/4 wave section of impedance equal to
 $\sqrt{Z_{in} \times Z_{out}}$ or about 35 ohms. Though 35 ohm coax is made, it's
not very common. But if your frequency is high enough, you may be
able to make a piece yourself from copper pipe and copper wire or
tubing. This probably won't be practical for you below 144MHz.

(2) is possible; see books on broadband transformers.

(4) is quite easy, from my experience; usually a fixed inductor near
the optimum and a variable capacitor to tune it in do fine. It should
be broader band than most single-band antennas.

: The purpose of this arrangement is to easily allow me (by remote control)
: to choose antenna 'A', antenna 'B', or 'Both', with a minimal amount of
: outside complexity.

So the switching isn't quite trivial: you'll want to switch out the
matching network if either antenna is driven by itself. Sounds like
probably three SPDT switches. Be careful about leaving unterminated
stubs in any of the configurations the switches can assume, especially
if this is for VHF or above.

73, K7ITM

Date: Tue, 30 Aug 1994 18:38:12 GMT
From: ihnp4.ucsd.edu!dog.ee.lbl.gov!overload.lbl.gov!agate!spool.mu.edu!
howland.reston.ans.net!math.ohio-state.edu!sdd.hp.com!col.hp.com!srngenprp!
alanb@network.ucsd.edu
Subject: Matching 50 ohms to 25 ohms (2 feedlines)
To: ham-ant@ucsd.edu

Tom Bruhns (tomb@lsid.hp.com) wrote:

: David Feldman (dgf@netcom.com) wrote:

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: not very common. But if your frequency is high enough, you may be
: able to make a piece yourself from copper pipe and copper wire or
: tubing. This probably won't be practical for you below 144MHz.

You could also use two 1/4-wave pieces of 75-ohm coax in parallel.
The impedance of the resultant 37.5-ohm transmission line will be
close enough. Cut the two pieces from the same roll, or measure
them to be sure the electrical lengths are identical.

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End of Ham-Ant Digest V94 #289
